

REMARKS

Claims 1-19 and 24-28 remain in the application. Claims 13-19 and 24-27 have been allowed. Claims 1-12 are rejected. Reconsideration of the rejection of claims 1-12 is respectfully requested.

Claims 1 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cur et al. (U.S.P. 5,345,814). Applicant respectfully traverses this rejection.

Cur et al. disclose vacuum thermal insulation panels 28 and apparatus for testing gas leakage of vacuum thermal insulation panels 28. The apparatus used to test for gas leakage is illustrated in FIG. 22 of Cur et al. It must be specifically noted that the Cur et al. test apparatus illustrated in FIG. 22 and applicant's claimed apparatus for measuring package permeability are used to perform substantially different tests. Further, nothing in the disclosure of Cur et al. suggests that their test apparatus illustrated in FIG. 22 could be used for measuring package permeability as disclosed and claimed by applicant.

Referring to column 5, lines 1-30, cur et al. describe in detail "three different levels of the rate of helium gas escape from the interior of the vacuum panel." The three different levels are illustrated schematically in FIG. 8 of

Cur et al. "A first amount indicated by arrow 80 represents a normal permeation rate of gas escape for a panel, thus representing a leak rate indicated by line 82 which Applicants have determined to be approximately in the range of 1×10^{-7} atm cc/sec." "A second, higher leak rate indicated by arrow 84 represents an excessive amount of permeation generally caused by some fault in the film ... The third arrow indicator 86 represents a rate of gas escape significantly greater than the permissible and would represent a hydrodynamic leak"

Turning to column 7, line 67, through column 8, line 11, Cur specifically teach "the leakage may be one of two types." They specifically explain that the two types are a hydrodynamic leak or a permeation-related gas flow. They go on to explain "A permeation-related gas flow is characterized by flow in the direction of a concentration gradient. Such a gas flow would indicate a higher rate of permeation through the panel than is acceptable and would indicate defective laminate film." Thus, Cur et al. clearly teach the testing of panels for leakage greater than the normal permeation rate of gas escape for the panel and generally due to defective laminate film or pin holes.

It must be noted that the first amount, or the normal permeation rate of gas escape for the panel, is generally the measurement performed by the presently claimed apparatus. Further, it must be noted that Cur et al. do not appear to be capable of measuring the normal permeation rate since they simply approximate a range for the normal permeation rate of gas escape for the panel, i.e. "approximately in the range of 1×10^{-7} atm cc/sec."

First, applicant's claims 1 and 28 specify "Apparatus for measuring package permeability and/or permeant sorption". Further, applicant's claims 1 and 28 specify "a sensor positioned within the sealed chamber and designed to provide signals, external of the chamber, indicative of permeant concentrations within the chamber". This specific construction provides a substantial advantage over prior art testing devices, such as those that use a carrier gas to carry samples to a detector external to the chamber. As applicant states in the specification, at page 4, lines 11-18, "The concentration of permeated permeant is often extremely small in the second chamber, especially when the sample material is a good barrier. Measuring such low concentrations of the permeants reliably is a challenge for most sensors. Furthermore, such low permeant concentrations are diluted several fold when a carrier gas is used to

transport the permeated permeant to the remote detector." Positioning the sensor in the sealed chamber is not simply rearranging the parts but is a major step in providing the sensitivity needed to measure package permeability.

The Examiner has duly noted that "Cur et al. disclose the claimed invention except for locating the sensor within the sealed chamber." Because Cur et al. are testing for a rate of gas escape significantly greater than the normal permeation rate of gas escape for the panel, the position of the sensor is not important to them and no changes in position could possibly be suggested. Cur et al. never suggest the measuring of the normal permeation rate and, therefore, never teach one skilled in the art how to perform such measurements. They simply estimate, guess, or leave the measuring of the normal permeation rate to one skilled in applicant's field.

Because Cur et al. never teach or even remotely suggest the measuring of the normal permeation rate, they could not suggest to one of ordinary skill in the art "a sensor positioned within the sealed chamber". Clearly, when one is dealing with a rate of gas escape significantly greater than the normal permeation rate the position of the sensor is not an issue. Thus, the extra sensitivity needed to measure

package permeability is not needed in the Cur et al. apparatus and is not suggested to one of ordinary skill in the art by the Cur et al. teaching.

The Examiner goes on to state that "A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art." Certainly, applicant's intended use "results in a structural difference between the claimed invention and the prior art." At least one structural difference is that applicant positions his sensor within the sealed chamber.

The Examiner cites *In re Finsterwalder*, 436 F.2d 1028, 168 USPQ 530 (CCPA 1971), for the legal precept "If the prior art is capable of performing the intended use, then it meets the claim." (The Court actually stated "appellant is not claiming here any particular *method* of construction, but rather he claims *apparatus* which may be used in any method of construction to which it is reasonably adaptable.") Applying the Examiner's legal precept to the disclosure of Cur et al. we must ask: can the apparatus of Cur et al. measure package permeability and/or permeant sorption? The answer must be: there is no way to determine since Cur et al. never suggest the measuring of the normal permeation rate and, therefore, never teach one skilled in the art how

to perform such measurements. They simply estimate, guess, or leave the measuring of the normal permeation rate to one skilled in applicant's field. The apparatus of Cur et al. is only designed to measure a rate of gas escape significantly greater than the normal permeation rate, caused by hydrodynamic leaks or permeation-related gas flows. Therefore, Cur et al. must fail the *In re Finsterwalder* test as stated by the Examiner.

In conclusion, nothing in the Cur et al. disclosure suggests positioning the sensor within the sealed chamber as claimed by applicant. Further, since applicant's claims 1 and 28 recite the intended use of the claimed invention and a structural difference between the claimed invention and the prior art and since the Cur et al. disclosure fails the *In re Finsterwalder* test as stated by the Examiner, applicant believes that claims 1 and 28 are not obvious in view of Cur et al. and are, therefore, allowable.

Claims 2-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cur et al. (U.S.P. 5,345,814) as applied to claim 1 above, and further in view of Tou et al. (U.S.P. 4,944,180). Applicant respectfully traverses this rejection.

For the reasons stated above Cur et al. measure a rate of gas escape significantly greater than the normal permeation rate, caused by hydrodynamic leaks or permeation-related gas flows. Further, the mere fact that Tou et al. disclose apparatus for measuring permeation does not in any way teach one skilled in the art to modify the Cur et al. device so it can measure permeability. There is a substantial difference between gas leaking through holes in a package (Cur et al.) and gas permeating through the material of the package. As to whether the Cur et al. device could be modified to include temperature and humidity sensors/controls from the disclosure of Tou et al., applicant is doubtful since it would require such substantial changes. However, applicant believes the Cur et al. apparatus cannot be modified, using the Tou et al. teaching or the Cur et al. teaching, to provide the claimed structure.

Certainly, the Tou et al. humidity control system will not operate in a closed system similar to that disclosed by applicant. Further, claim 9 specifies "the humidity controlling apparatus includes a container positioned within the chamber and containing a salt solution". Claim 10 specifies "the container includes a bag formed of a microporous hydrophobic material." Claim 11 specifies "the

bag and the salt solution contained therein are pre-selected to maintain the chamber at a substantially constant humidity." Clearly, nothing in the disclosure of Tou et al. suggests structure similar to the structure claimed in any of these claims.

Also, the Tou et al. structure and teaching has all of the deficiencies mentioned above and previously relative to Cur et al. For example, the Tou et al. structure can only test one film at a time, the Tou et al. device uses a flow of gas to carry particles to be sensed to a detector, and the Tou et al. structure does not have two modes of operation similar to applicant's claimed structure. Thus, no combination of Cur et al. and Tou et al. can be suggested to provide the structure claimed by applicant and claims 2-11 are not obvious in view of Cur et al. and/or Tou et al. alone or in any proper combination.

Claims 2-4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cur et al. (U.S.P. 5,345,814) as applied to claim 1 above, and further in view of Retta et al. (U.S.P. 5,138,871). Applicant respectfully traverses this rejection.

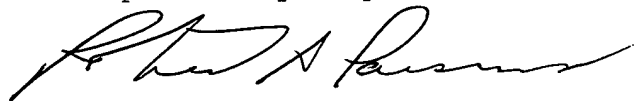
As stated above, Cur et al. measure a rate of gas escape significantly greater than the normal permeation rate, caused by hydrodynamic leaks or permeation-related gas flows. Further, the mere fact that Retta et al. disclose apparatus for measuring permeation does not in any way teach one skilled in the art to modify the Cur et al. device so it can measure permeability. There is a substantial difference between gas leaking through holes in a package (Cur et al.) and gas permeating through the material of the package. It also should be noted that Retta et al. measure particle concentration in liquid. They do not even discuss molecules as is incumbent in gas permeation testing. No apparatus for measuring permeant sorption is even suggested.

As to whether the Cur et al. device could be modified to include agitation apparatus from the disclosure of Retta et al., applicant is doubtful since it would require such substantial changes. However, applicant believes the Cur et al. apparatus cannot be modified, using the Retta et al. teaching or the Cur et al. teaching, to provide the claimed structure. Thus, no combination of Cur et al. and Retta et al. can be suggested to provide the structure claimed by applicant and claims 2-4 and 12 are not obvious in view of Cur et al. and/or Retta et al. alone or in any proper combination.

SUMMARY

In view of the foregoing, it is submitted that each of the claims 1-12 is in condition for allowance. Withdrawal of the rejections and allowance of all of the claims is respectfully requested. Should there be any questions or remaining issues, Examiner is cordially invited to telephone the undersigned attorney for a speedy resolution.

Respectfully requested,



Robert A. Parsons
Attorney for Applicant
Registration No. 32,713

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CUSTOMER NUMBER 29370

4000 North Central
Suite 1220
Phoenix, Arizona 85012
(602) 252-7494